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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/537,226

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Shin'ya Katayama

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EXAMINER

KASHNIKOW, ERIK

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/537,226	Applicant(s) KATAYAMA ET AL.	
	Examiner ERIK KASHNIKOW	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6,7,11-17,19-28 and 30-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6,7,11-17, 19-28 and 30-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/15/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-2, 7, 26, 27, 28 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Tatsuhiko et al. (JP 09-058650).
2. In regards to claims 1, 26 and 27 Tatsuhiko et al. teach a paper carton suitable for being filled with liquid contents (Paragraph 0001). Tatsuhiko et al. teach that the carton be comprised of a resin layer and a paper layer (Paragraph 0006). Tatsuhiko et al. teach a resin layer that can be an ethylene-vinyl alcohol copolymer (paragraph 0008). Tatsuhiko et al. teach polyethylene imine's can be used to coat the paper to promote adhesion (paragraph 0012), and further teach using DIKKU dry AC108 from Dainippin Ink & Chemicals (paragraph 0022). Given that Tatsuhiko et al. disclose use of polyethyleneimine known under the tradename AC-108 which is identical to the polyethyleneimine used in the present invention, it is clear that AC-108 would inherently possess formula as presently claimed. Tatsuhiko et al. also teach that adhesives can be used between resin layers and between resin and paper layers (paragraph 0015). Tatsuhiko et al. teach that the resin layers can be formed by coextrusion (paragraph 0014). In regards to the limitation that the multi-resin layer is bondable at 290°C or lower at the outlet of the die, onto the base paper without thermal decomposition of the barrier resin layer, Examiner points out that as Tatsuhiko et al. teach the same materials

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as applicants in the same required order as applicants then this property is inherent and would necessarily be the same.

3. In regards to claim 2 Tatsuhiko et al. teach that the resin layer may be single or multilayer (paragraph 0009). The extra layers in a multilayer embodiment of the invention would place an extra layer on the opposite side of the barrier layer than the paper layer. As mentioned above Tatsuhiko et al. do teach the use of adhesives between resin layers.

4. In regards to claims 7 Tatsuhiko et al. teach the adhesive layer can comprise compounds such as ethylene methacrylic acid and a maleic anhydride polypropylene copolymer (paragraph 0015).

5. In regards to claim 28 while Tatsuhiko et al. are silent regarding using their containers to store soft drinks, they do mention that their containers are suitable for a wide variety of beverages (paragraph 0017), and it would have been obvious to one of ordinary skill in the art at the time of the invention to include soft drinks as beverages which may be stored by the container of Tatsuhiko et al.

6. In regards to claim 32 Tatsuhiko et al. teach that ethylene can be used as the polyolefin (paragraph 0015).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the

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subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 6, 17, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tatsuhiko et al. (JP 09-058650) in view of Akao et al. (US 5,358,785).
9. As stated above Tatsuhiko et al. teach a paper carton suitable for being filled with liquid, as well as adhesive layers made from carboxylic acid and polyolefin resins (paragraph 0015). However they are silent regarding the polymers being graft polymers.
10. Akao et al. teach multilayer laminated films, formed using extrusion processes, which are used in packaging (Akao column 1 line 6).
11. In regards to claim 6 Akao et al. teach that polyolefin resins graft modified by carboxylic acids are known in the art as adhesive resins used to join other resins (Akao column 29 line 23-29).
12. In regards to claim 30 Tatsuhiko et al. teach that the adhesive can be a maleic anhydride (Tatsuhiko paragraph 0015).
13. In regards to claim 31 Tatsuhiko et al. teach that ethylene can be used as the polyolefin (Tatsuhiko paragraph 0015).
14. In regards to claim 17, as stated above Tatsuhiko et al. teach that the polyethylene imine can be used to coat the base to promote adhesion to the subsequent adhesive layer (Tatsuhiko Paragraph 0012). Akao et al. teach the

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polyolefin modified carboxylic acid adhesive layers, but is silent regarding the melt flow rate. However since all the limitations of the adhesive are taught, the melt flow rate would be within the same range of applicants because it is an inherent property.

15. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Tatsuhiko et al. with the invention of Akao et al. because the invention of Akao et al. has great tear strength and puncture strength (Akao column 1 lines 20-22).

16. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tatsuhiko et al. (JP 09-058650) in view of Miyake et al. (US 5,942,320).

17. As stated above Tatsuhiko et al. teach a paper carton suitable for being filled with liquid, as well as using ethylene-vinyl alcohol copolymer as the barrier layer. However they are silent regarding the saponification of the ethylene vinyl copolymer.

18. Miyake et al. teach a multilayer barrier composite film with gas barrier properties (column 1 lines 5-6).

19. In regards to claim 11 Miyake et al. teach that ethylene vinyl alcohol copolymers with a ethylene content of 5-50% mol and a saponification of not less than 99.5% are the preferred barrier resins for their invention (column 11 line 58 - column 12 line 24).

20. In regards to claim 12 Miyake et al. teach all limitations of the composition of the ethylene vinyl alcohol copolymer and therefore the melt flow rate would be inherent.

21. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Tatsuhiko et al. with the invention of Miyake et al. because the

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invention of Miyake et al. offers prominent gas barrier properties against water vapor, oxygen and aromatic components (Miyake column 1 lines 6-8).

22. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tatsuhiko et al. (JP 09-058650) in view of Akao et al. (US 5,358,785) in further view of Miyake et al. (US 5,942,320).

23. As stated above Tatsuhiko et al. teach a paper container suitable for holding liquids, but are silent regarding the thickness of the individual layers.

24. As stated above Akao et al. taught the adhesive layers. Akao et al. further teach that the adhesive layers have a thickness of 1-50 μm (column 16 lines 63-64). However Akao et al. are silent regarding the thickness for a barrier layer. As stated above one of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Tatsuhiko et al. with the invention of Akao et al. because the invention of Akao et al. has great tear strength and puncture strength (Akao column 1 lines 20-22).

25. Miyake et al. teach the barrier layer described by applicants. They further teach that the barrier layer have a thickness that is between 0.05-15 μm (column 14 lines 30-33).

26. One of ordinary skill in the art at the time of the invention would be motivated to modify the inventions of Tatsuhiko et al. and Akao et al. with the invention of Miyake et al. because the invention of Miyake et al. offers prominent gas barrier properties against water vapor, oxygen and aromatic components (Miyake column 1 lines 6-8).

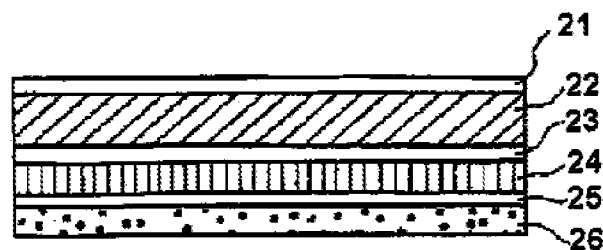
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27. Claims 14-16 and 19-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tatsuhiko et al. (JP 09-058650) in view of Frisk et al. (WO 00/44632 with US 6,974,612 relied upon as the translation).

28. As stated above Tatsuhiko et al. teach a paper container for holding liquids.

29. Tatsuhiko et al. teach an outer layer but are silent as to the thickness of the individual layers and use of applicant's materials.

30. Frisk et al. teach a package material for paper containers (column 1 lines 6 and 7).



31. In regard to claim 14 Frisk et al.

teach an innermost thermoplastic layer which has a thickness of 20-50 μm (Frisk column 5 line 9).

32. In regards to claim 15 Frisk et al. teach that the innermost layer comprises a linear low density polyethylene (Frisk column 5 lines 26-27).

33. In regards to claim 16 Frisk et al. teach a melt flow index of 5-20 (Frisk column 5 line 18).

34. In regards to claim 19 and 20 Frisk et al. teach an outermost layer, which is on the opposite side of the paper base layer than the coextrusion laminated surface, which has a thickness of 10-25 μm and a melt flow index of 5-20 (Frisk column 4 line 33-41 and figure 1).

35. In regards to claim 21 Frisk et al. do not teach any layer that is closer to the inner part of a container than the innermost layer described above. Frisk et al. do teach that

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the containers are to be filled with liquid contents (Frisk column 1 line 20-26). Therefore it is obvious to one of ordinary skill in the art at the time of the invention that the innermost layer is a content contacting layer.

36. In regards to claim 25 Frisk et al. teach that the innermost layer comprises a linear low density polyethylene (Frisk column 5 lines 26-27).

37. In regards to claims 22, 23 and 24 Tatsuhiko et al. teach coextrusion, single extrusion and sandwich lamination as methods for forming the film of their invention (Tatsuhiko paragraph 0014). While they do not specify it for any of the specific layers, it would be well within the ability of one of ordinary skill in the art at the time of the invention to apply these methods to the innermost layer.

38. In regards to claim 27 Frisk et al. teach the container can contain many various types of drinks but specify that the preferred embodiment of the invention is that the container contains a liquid food (Frisk column 13 line 3 - column 14 line 2). It is obvious to one of ordinary skill in the art at the time of the invention that a soft drink is a liquid food product and one of ordinary skill would be motivated to modify the invention so as to be able to contain these many various drinks.

Response to Arguments

39. Applicant's arguments, see arguments, filed 04/15/09, with respect to the objection of the claims have been fully considered and are persuasive. The objection of the claims has been withdrawn.

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40. Applicant's arguments, see arguments, filed 04/15/09, with respect to the 35 U.S.C. 112 2nd paragraph rejection of the claims have been fully considered and are persuasive. The 112 2nd paragraph rejection of the claims has been withdrawn.

41. In regards to arguments concerning the location of the adhesive layer. Examiner points out that in paragraph 0015 of the Tatsuhiko reference, it is taught that the adhesive layer may be between the resin and the paper. Examiner also points out that the courts have ruled that "applicant must look to the whole reference for what it teaches. Applicant cannot merely rely on the examples and argue that the reference did not teach others." In re Courtright, 377 F.2d 647, 153 USPQ 735,739 (CCPA 1967).

Examiner further notes that as the claim is written there is nothing that limits where the second adhesive layer is in relation to the other layers. The claim only limits the positioning of the first adhesive layer being in contact with the coated surface of the base paper layer. The barrier layer and the second adhesive layer have to be present but are not limited as to where they are present. Further while Tatsuhiko does not teach that an adhesive layer is an outer layer, as the claim is using comprising language additional layers, such as an additional resin layer can be attached to the first resin layer by an adhesive, which would satisfy the limitations of claim one, i.e. that there be two adhesive layers wherein one is touching the coated surface of the paper layer.

Paragraphs 7 and 8 of this office action were used to teach where Tatsuhiko teaches the multi resin layer and as such the multiple adhesion layer limitation. Further paragraph 0015 states that the adhesives may be placed between the resin and paper layer, and Example 1 (paragraph 0020) teaches embodiments wherein the adhesive

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(denatured polyethylene) is between the coated paper and the resin layer. In regards to Applicant's arguments regarding the physical methods, such as corona discharge used to increase adhesion, Examiner notes that the physical methods are one option presented by Tatsuhiko, as is the adhesive layers. Tatsuhiko does not require that both or just the physiochemical method are used.

42. In regards to Applicant's arguments that one of ordinary skill in the art would not be motivated to use the Tatsuhiko reference because it has a different purpose than that of Applicant's invention. Examiner points out that even though the reference might have a different purpose than that of the invention presently claimed it does contain all the presently claimed limitations and that is why it is used as a reference.

43. In regards to Applicants arguments regarding the Ito reference, the rejection has been changed to reflect the amended claims.

44. Examiner notes that while Akao, Miyake and Frisk do not disclose all the features of the present claimed invention, they are used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, and in combination with the primary reference, discloses the presently claimed invention. If the secondary reference contained all the features of the present claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references.

Conclusion

45. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

53. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIK KASHNIKOW whose telephone number is (571)270-3475. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (Second Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erik Kashnikow
Examiner
Art Unit 1794

/Rena L. Dye/
Supervisory Patent Examiner, Art Unit 1794